# LIGHT BIG BORE KIT 85 • 88cc for monkey No.1/4

C	ODE	CODE			
85cc 214-1013410		85cc 214-1016410			
88cc 214-1013420 / (CHROM	ME CYLINDER) 215-1013402	88cc 214-1016420 / (CHROME CYLINDER) 215-1016402			
APPLICATION : A		APPLICATION : B / C			
MONKEY / GORILLA	FNO,Z50J-1000001 ~ 1510400	MONKEY / GORILLA	FNO,Z50J-1600008 ~ 1805927		
CHALY ** 1)	FNO,CF50-1000002 ~ 2899999	MONKEY / GORILLA	FNO,Z50J-2000001 $\sim$		
DAX (6V ST50)	FNO,ST50-1000001 ~ 6346265		FNO,AB27-1000001 ~ 1899999		
CD50	FNO,CD50-1100001 ~ 1330600	MONKEY BAJA			
	FNO,C50-N000002 ~ V488897	DAX (12V AB26)			
SUPER CUB50	FNO,C50-Z000002M ~ Z069126M	JAZZ			
	FNO,C50-3000001 ~ 5121324	MAGNA50	FNO,AC13-1000001 ~		
	FNO,C50-5200011 ~	MOTRA			
	g is required because cylinder fin	CHALY * 1)	FNO,CF50-3000031 ~		
and leg shield interrupt ear	ch other.	MONKEY R / RT			
•Thank you for purchasing	g Kitaco product. Read and	CD50 / BENLY50S / BENLY CL50	FNO,CD50-1500001 ~		
understand the instructio		SUPER CUB50	FNO,C50-8000001 ~ 9501323		
<ul> <li>Special tools are required</li> </ul>		PRESS CUB	FNO,C50-9600001 ~ 0095210		
•After installation, please		LITTLE CUB	FNO,C50-0200001 ~		
manual.	use this sheet as setting		FNO,AA01-1000001 ~		
%Instruction sheet is not i	ncluded to repair parts	GIORCUB	FNO,AF53-1000001 ~		
Please keep this instruct		XR50R/CRF50F	AE03		
r lease keep tills illstuct		※1) In case of CHALY, machining is required because cylinder fin			

### **ATTENTION (MUST READ)**

This product is for racing use. It is out of warranty. Unable to ride on public road with installed vehicle. We are not responsible for violation of law or damages and accidents caused by assembling mistake and improper setting.
This kit use stock cylinder head and camshaft. The cylinder head and parts inside are not included.

and leg shield interrupt each other.

•By installing this product, changing carbrater, plug, gear, etc and setting is required. If riding with stock setting, it unables to power up, cause of burning and break. Please set up to match the engine. Please change stronger clutch and oil pump. (Refer to the No.4 option parts list.)

•This big bore kit is for stock stroke. Do not install stroke up crank shaft.

•Please follow this instruction sheet. Do not modify the way which is not listed or it will cause burning, damage and trouble.

•Please ask authorized mechanic for assembling and setting. Ask a specialist at specialty shop if you do not understand the role of the surrounding parts.

•Change engine oil after break in (around 100km).

•Refer to the manufacturer service manual when installation.

•Bolts and nuts may get loosen by engine vibration. Make sure not to loosen any bolts and nuts before driving.

•Clean each parts by parts cleaner, etc and check the oil line is choked by using air duster.

•Oil the parts with engine oil when assembling.

Bolts and nuts may get loosen by engine vibration. Make sure not to loosen any bolts and nuts before driving.
Do not use engine brake, etc burden the mission. When starting engine with kick, check the gear is engaged before kick. Recommend to push start more than 2nd gear.

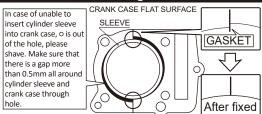
•Please ride under 5,000rpm when break in.



# ATTENTION WHEN INSTALLING

### 1. The clearance between cylinder sleeve and crank case through hole.

When installing cylinder, make sure that there is a gap more than 0.5mm all around cylinder sleeve and crank case side through hole. Because of the crank case tolerance, 0.5mm or less gap might interrupt the sleeve. In that case, shave crank case through hole sharply to make clearance more than 0.5mm. If the gasket sticks out from crank case matching surface, cylinder sleeve might touch the gasket because of deformation by thermal expansion, and it might cause of burning piston and oil leaking. Crank case hardness is more



than tolerance, processing and assembling require extreme caution.

### 2. OTHER ATTENTION

•Please use unleaded premium gasoline. This is high pressure, regular gasoline may cause of knocking and breaking vehicle.

#### **OPTION PARTS CHARACTERISTIC**

•By installing PCФ20 big carburater, the amount of intake air increases a lot and absolute performance improvement. By installing SPL camshaft, significant performance improves due to changes amount of maximum camshaft lift and working angle.

More intake and exhaust efficiency, it makes high performance engine and high speed smoothly.

Install  $\Phi$ 20mm carburater, SPL high camshaft, performance muffler together make maximum output more than 6PS and maximum speed 100km/h.

•For electrical system, recommend to use power rev CDI. For the best ignition characteristic for engine performance. •Clutch is consumable product. If it slips, stop riding and change to reinforced clutch kit.

More tuning (power) requires reinforced clutch.

•In case of engine become high temperature by high speed riding under summer, etc, please install oil cooler kit.

	OPTION PARTS (Please purchase in necessary.)				
	NAME	CODE			
	KEIHIN PCФ20 LIGHT CARBURATER (specified for models) *1	110-1015506	*1 KEIHIN PC20 LIGHT CARBURATER APPLICATION M		
INTAKE	SUPER POWER CLEANER (Ф35)	515-6000350	MONKEY / GORILLA	FNO,Z50J-1600008~	
	MULTI HIGH THROTTLE SET 750mm	901-0550750		FNO,AB27-1000001~	
			MONKEY BAJA		
ELECTRIC	POWER REV2	766-1123300	DAX50 (12V)*	AB26	
DRIVE	3 DISK DRIVE UNIT	307-1123510	JAZZ	AC09	
	HIGH CANSHAFT (For application A)	300-1013000	XR50R/CRF50F *	AE03	
	SPL HIGH CANSHAFT (For application C)	300-1083100	*In case of installing DAX50, Kitaco fuel cock type1 (575-0500000) is required. *In case of installing XR50R / CRF50F, machini throttle holder and purchase other throttle		
071155	(LOCKER ARM) TITANUM NUT	303-1013711			
OTHER	SUPER OIL PUMP KIT (For application A / B)	331-1013300	cable are required.		
	SUPER OIL PUMP KIT (For application C)	331-1083300	·		
	CAP NUT & WASHER SET	313-0600000			
	SUPER OIL COOLER SET (3ROW CONDENSER)	360-1133200			

VERSION UP KIT	VERSION UP KIT				
There are version up kit enables to	▼ APPLICATION	SPEC	CODE	▼REMARK	
tuning from light big bore kit to	A	LIGHT88cc → STD88cc	213-1013101	*Reuse cylinder.	
STD (standard) big bore kit. If you	В	LIGHT88cc → STD88cc	213-1016001	*Reuse cylinder.	
feel not enough with light big bore	C	LIGHT88cc → STD88cc	213-1033001	*Reuse cylinder.	
kit, please purchase it.					



#### LIGHT BIG BORE KIT 85 • 88cc for monkey

#### No.2/4

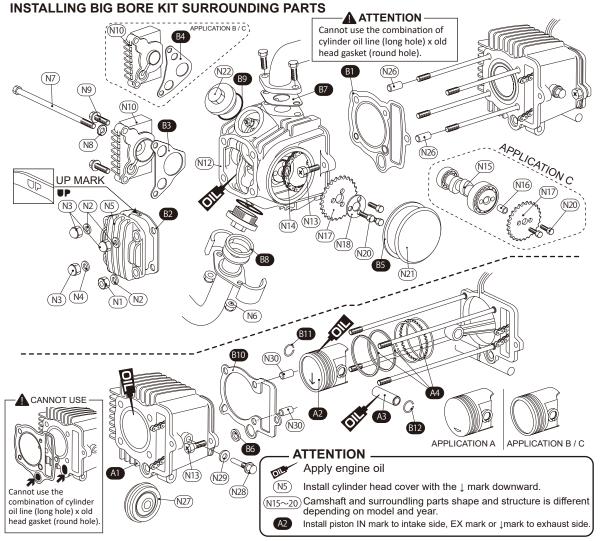


FIGURE	NAME	TORQUE	FIGURE	NAME	TORQUE
N1	M6 NUT	1.2kgf • m	N15	CAMSHAFT	
N2	6mm FLAT WASHER		N16	DOWEL PIN 8 x 12	
N3	M6 CAP NUT	1.2kgf • m	N17	CAM SPROCKET	
N4	6mm COPPER FLAT WASHER		N18	CAM SPROCKET SIM	
N5	CYLINDER HEAD COVER		N20	M5 BOLT	0.8kgf • m
N6	M6 FLANGE NUT	1.2kgf • m	N21	L CYLINDER HEAD SIDE COVER	
N7	M6 x 110 BOLT	1.0kgf • m	N22	TAPPET CAP	1.2kgf ∙ m
N8	6mm SEALING WASHER		N26	DOWEL PIN 8 x 14	
N9	M6 x 20 BOLT	1.0kgf • m	N27	CAM CHAIN GUIDE ROLLER	
N10	R CYLINDER HEAD SIDE COVER		N28	ROLLER PIN	1.0kgf • m
N12	STOCK CYLINDER HEAD ASSY		N29	8mm SEALING WASHER	
N13	M6 BOLT	1.0kgf • m	N30	DOWEL PIN 8 x 12	
N14	CAM CHAIN				

▲ Basically, reuse genuine parts if it is unattached.

If there is a hard degradation like a blem, fatigue and wear etc on the reuse parts, please change to new ones.

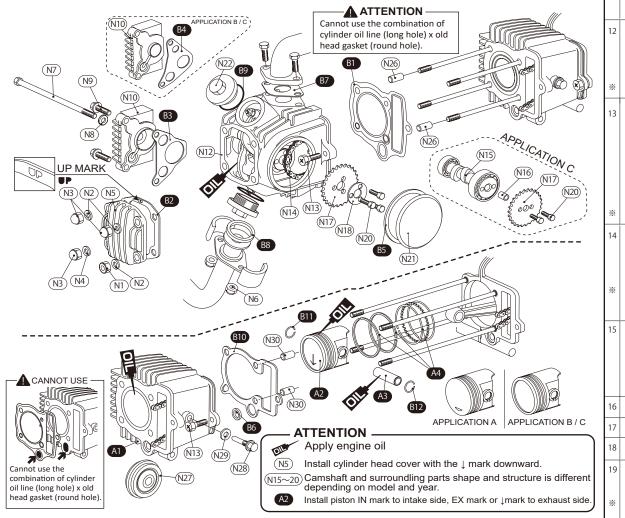
## PACKING LIST IS ON NO.3

1	Remove front wheel and front fender ease to operation. (Depending on the models, it does not need to remove.)
2	Remove all oil.
3	Remove spark plug and muffler.
4	Remove 3pcs (6pcs depending on models) M6 bolts to remove left side case cover.
5	Remove gasoline inside carburater.
6	Remove manifold from engine.
7	Remove 3pcs M6 bolts and a sealing washer from right side cylinder head, then remove left and right head side cover and each head side cover gasket.
*	If the gasket stick to head side cover, remove by scraper, etc.
8	Remove cam sprocket installation bolt, then remove cam sprocket.
9 ※	Remove M6 nut (1pc nut, 3pcs cap nut), 4pcs sealing washer and crossed hole M6 bolt on left side that are tighen head, then remove head cover, gasket, cylinder head assy and head gasket. Remove 2pcs orifice O ring.
*	If the gasket stick to head cover and head, remove by scraper, etc.
10	Remove crossed hole M6 bolt on left side of cylinder, remove roller pin and sealing washer on left side, remove cam chain guide roller not to fall crank case, and remove cylinder.
*	Remove cylinder gasket, 2pcs dowel pin and orifice O ring at the same time of removing cylinder.
*	If the gasket stick to crank case contact surface, remove by scraper, etc.

OPTION PARTS (SUPER OIL PUMP KIT)				
(For application A / B)	331-1013300	Z		
(For application C)	331-1083300			
OPTION PARTS (CAMSHAFT)				
HIGH CAMSHAFT (For application A)	300-1013000	-		
SPL HIGH CAMSHAFT (For application C)	300-1083100			

▲Sold separately. Please purchase in necessary. △If installing big bore kit, recommend to install oil pump together to match the tuning. △If installing high camshaft, increase the performance. However, limited application. Be careful of it.

#### No.3/4



If there is a hard degradation like a blem, fatigue and wear etc on the reuse parts,

#### **INSTALLING BIG BORE KIT SURROUNDING PARTS**

▲ Basically, reuse genuine parts if it is unattached.

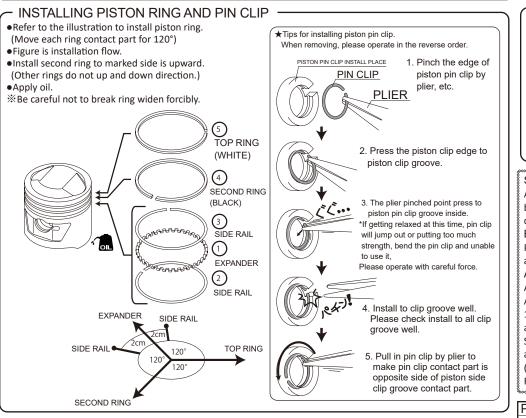
please change to new ones.

## HOW TO INSTALL

11	Remove piston pin clip on both sides of piston by pliers, etc to remove, push out piston pin to remove piston.							
12	Install piston ring to piston, then install piston pin and pin clip. Be careful of piston direction when installing. Insert one side of pin clip, insert pin matches to conrod, then insert the other side of clip firmly to install. Apply oil to piston, piston pin and piston ring.							
~								
*	Install cylinder gasket, rubber seal and 2pcs dowel pin (short) to specified place, assemble cylinder while squeezing piston ring by hand not to damage cylinder inside and piston, then tighten cylinder temporarily with cylinder left side crossed hole M6 bolt. Pull out the cam chain and install cam chain guide roller with roller pin and sealing washer. Operate attention 1.							
14	Install gasket and 2pcs dowel pins (long) to specified place, assemble cylinder head and tighten cylinder head temporarily with cylinder head left side crossed hole M6 bolt.							
*	When installing head gasket, fix the gasket ring and cylinder I.D with a little bit of glue ease to install cylinder head.							
15	Install head cover gasket (it only matches 1 place, must match it) and cylinder head cover, tighten nut and sealing washer each 4pcs diagonally with specified torque. Tighten cylinder and cylinder head left side crossed hole M6 bolt additionally to install.							
16	Set the valve timing as illustration. (Refer to No.4)							
17	Adjust valve clearance. (Refer to No.4)							
18	Install tappet cap O ring to 2pcs of stock cylinder head tappet cap.							
19	Install cylinder head sided cover gasket, then install cylinder head side							
*	cover with stock M6 bolt 3pcs and sealing washer. For application B/C, 2 types of right side head side covers are attached. Please use compatible one to match the model and year.							
20	Install muffler gasket and muffler, then pour specified amount of engine oil. Make sure drain bolt is tightened firmly. *In case of install oil cooler, etc, add the additional amount for oil cooler capacity.							
21	Rotate kick pedal slowly to check the crank rotates smoothly, then install plug and plug cap. Put the all removed parts back to finish installation. Check the carburater drain screw, fuel cock, etc carefully.							
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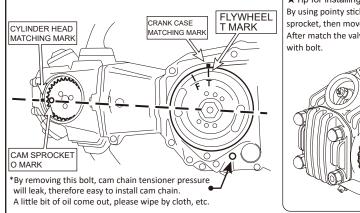
#### No.4/4



#### - HOW TO MATCH THE VALVE TIMING -

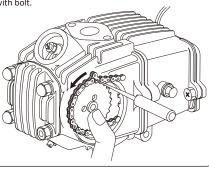
•Install cam chain with this condition.

\*This is just a guide line, make sure cam sprocket O mark is on the center line of crank shaft and cam shaft.

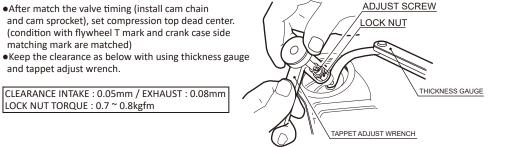


#### ★Tip for installing chain.

By using pointy stick (awl, etc), lift a piece of chain biting sprocket, then move to engage for ease to install. After match the valve timing, fix cam sprocket to cam with holt



#### -VALVE CLEARANCE ADJUSTMENT



#### START ENGINE AFTER INSTALLATION

A time lag of circulation engine oil around engine inside may cause of burning. In case of the engine with oil check bolt, remove check bolt and spark plug, then kick to the (cranking) oil comes out from check bolt. After check it, put check bolt and spark plug back and start engine.

BREAK IN (HEAT TREATMENT)

Please do break in with low (short) gear (in case of 5speed model, please use 4speed) and total 2 hours without applying force to engine.

ADDITIONAL TIGHTENING

After break in, cylinder, cylinder head stud bolts might get distortion and elongation because of cooling and heating. Additional tightening to even the power. The bolts of cylinder head for most of the models are 4pcs + hexagon bolts 1 or 2 pcs. After the engine becomes room temperature, loosen a nut of 4pcs stud bolt, then apply oil to nut, washer and stud bolt screw part and tighten with specified torque.

Secondly, loosen diagonally stud bolt nut, then as same as previous, apply oil to nut, washer and stud bolt screw part and tighten with specified torque. (continue)

(ATTENTION! Do not loosen all 4pcs nut at once. Please operate one by one.)

Finally, apply oil to bolts and tighten with specified torque as same to finish.

PAC	PACKING LIST		APPLICATION A		APPLICATION B / C			
FIGURE	CODE	NAME	85cc (S) 214-1013410	88cc (S) 214-1013420	88cc (M) 215-1013402	85cc (S) 214-1016410	88cc (S) 214-1016420	88cc (M) 215-1016402
	311-1123100	Φ51.0 CYLINDER T2 (85cc) STEEL SLEEVE	x1	-	-	x1	-	-
A1	311-1123200	Φ52.0 CYLINDER T2 (88/108cc) STEEL SLEEVE	-	x1	-	-	x1	-
	311-1083701	Φ52.0 CHROME CYLINDER (88/108cc)	-	-	x1	-	-	x1
	351-1133400	Φ51.0 PISTON (85cc) 3R (0.8-0.8-1.5)	x1	-	-	x1	-	-
A2	351-1083201	Ф52.0 PISTON (88cc) 3R (0.8-0.8-1.5)	-	x1	x1	-	-	-
	351-1083301	Ф52.0 PISTON (88cc) 3R (0.8-0.8-1.5)	-	-	-	-	x1	x1
A3	353-0001336	PISTON PIN 13x36	x1	x1	x1	x1	x1	x1
A4	352-0006510	Ф51.0 PISTON RING (85cc) 3R (0.8-0.8-1.5)	x1SET	-	-	x1SET	-	-
A4	352-0006520	Ф52.0 PISTON (88/108cc) 3R (0.8-0.8-1.5)	-	x1SET	x1SET	-	x1SET	x1SET
в↓	960-1013088	RUBBER SEAL SET-A 6V (88/108) STAINLESS STEEL	x1SET	x1SET	x1SET	-	-	-
D↓	960-1016088	RUBBER SEAL SET-A (88/108) STAINLESS STEEL	-	-	-	x1SET	x1SET	x1SET
B1	961-1123200	HEAD GASKET (88/108) STAINLESS STEEL	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B2	966-1015022	CYLINDER HEAD COVER GASKET	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B3	966-1015020	R HEAD SIDE COVER GASKET	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B4	966-1015110	R HEAD SIDE COVER GASKET	-	-	-	(x1)	(x1)	(x1)
B5	966-1015021	L HEAD SIDE COVER GASKET	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B6	966-1015010	RUBBER SEAL 16mm BLACK	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B7	950-1015010	MANIFOLD RUBBER SEAL	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B8	70-963-11001	EX GASKET (H-1)	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B9	967-1015000	O RING 30.8mm	(x2)	(x2)	(x2)	(x2)	(x2)	(x2)
B10	962-1015000	BASE RUBBER SEAL	(x1)	(x1)	(x1)	(x1)	(x1)	(x1)
B11	354-0000130	PISTON PIN CLIP 13mm	(x2)	(x2)	(x2)	(x2)	(x2)	(x2)